WHAT IS CLAIMED IS:

1. An ultra-wideband transmitter, comprising:

a delay time controller for generating and inputting a periodic pulse to a first matched filter, outputting the periodic pulse to a second matched filter when data to be transmitted are at a first level of a binary logic level, and outputting the periodic pulse to a third matched filter when the data to be transmitted are at a second level of the binary logic level, wherein the first matched filter receives the periodic pulse from the delay time controller and outputs a reference signal for data determination, the second matched filter receives the periodic pulse from the delay time controller and outputs a first data signal earlier than the reference signal by a predetermined time, and the third matched filter receives the periodic pulse from the delay time controller and outputs a second data signal later than the reference signal by a predetermined time;

an adder for adding outputs of the first, second, and third matched filters and outputting the added signal; and

an antenna section for receiving the added signal from the adder and radiating the received added signal into the air.

2. The ultra-wideband transmitter according to claim 1, wherein each of the reference signal, the first data signal, and the second data signal is a pattern signal including a plurality of periodic pulses.

3. The ultra-wideband transmitter according to claim 1, further comprising an amplifier for amplifying the added signal from the adder and outputting the amplified signal to the antenna section.

4. An ultra-wideband wireless receiver comprising:

an antenna section for receiving and outputting an electronic wave signal to first and second matched filters, wherein the first matched filter receives the electronic wave signal from the antenna section and outputs a first output signal when the first matched filter detects a reference signal for data determination, and the second matched

filter receives the electronic wave signal from the antenna section and outputs a second output signal when the second matched filter detects a data signal;

a delay time measuring section for detecting whether the first or second output signal is output first and outputting the detected result; and

a data determining section for receiving the detected result from the delay time measuring section and determining whether the data signal is one of a first level and a second level of a binary logic level.

5. The ultra-wideband wireless receiver according to claim 4, wherein each of the reference signal and the data signal is a pattern signal including a plurality of periodic pulses.

6. The ultra-wideband wireless receiver according to claim 4, further comprising an amplifier for amplifying the wireless wave signal from the antenna section and outputting the wireless amplified wave signal to the first and second matched filters.

7. The ultra-wideband wireless receiver according to claim 4, wherein the delay time measuring section comprises:

a first circuit for receiving the first output signal from the first matched filter and for calculating one of a square value and an absolute value of the first output signal; and

a second circuit for receiving the second output signal from the second matched filter and for calculating one of a square value and an absolute value of the second output signal.

8. The ultra-wideband wireless receiver according to claim 4, wherein the delay time measuring section comprises:

a first latch section for receiving and latching the first output signal from the first matched filter;

a second latch section for receiving and latching the second output signal from the second matched filter;

a first storage unit for receiving the first output signal from the first matched filter and reading the second output signal;

a second storage unit for receiving the second output signal from the second matched filter and reading the first output signal; and

a reset section for receiving the signal latched by one of the first and second latch section and outputting a reset signal.

9. An ultra-wideband transmitter comprising:

a delay time controller for generating and inputting a periodic pulse to a first matched filter, outputting the periodic pulse to a second matched filter when first and second data to be transmitted are at a first level of a binary logic level, and outputting the periodic pulse to a third matched filter when the first data to be transmitted is at a first level of the binary logic level and the second data to be transmitted is at a second level of the binary logic level, outputting the periodic pulse to a fourth matched filter when the first data to be transmitted is at the second level of the binary logic level and the second data to be transmitted is at the first level of the binary logic level, and outputting the periodic pulse to a fifth matched filter when both of the first and second data to be transmitted are at the second level of the binary logic level, wherein the first matched filter receives the periodic pulse from the delay time controller and outputs a reference signal for data determination, the second matched filter receives the periodic pulse from the delay time controller and outputs a data signal earlier than the reference signal by a predetermined time, the third matched filter receives the periodic pulse from the delay time controller and outputs a data signal later than the reference signal by the predetermined time, the fourth matched filter receives the periodic pulse from the delay time controller and outputs a data signal later than the third matched filter by the predetermined time, and the fifth matched filter receives the periodic pulse from the delay time controller and outputs a data signal later than the fourth matched filter by the predetermined time;

an adder for adding outputs for the first through fifth matched filters and outputting an added signal; and

an antenna section for receiving the added signal from the adder and transmitting the received added signal into the air.

10. An ultra-wideband transmitter comprising:

an antenna section for receiving and outputting a wireless wave signal to first through fifth matched filters, wherein the first matched filter receives the wireless wave signal from the antenna section and outputs a first output signal when the first matched filter detects a reference signal for data determination, the second matched filter receives the wireless wave signal from the antenna section and outputs a second output signal earlier than the first matched filter by a predetermined time when the second matched filter detects the reference signal, the third matched filter receives the wireless wave signal from the antenna section and outputs a third output signal earlier than the second matched filter by the predetermined time when the third matched filter detects the reference signal, the fourth matched filter receives the wireless wave signal from the antenna section and outputs a fourth output signal earlier than the third matched filter by the predetermined time when the fourth matched filter detects the reference signal, and the fifth matched filter for receiving the wireless wave signal from the antenna section and outputting a fifth output signal when the fifth matched filter detects a data signal;

a delay time measuring section for detecting whether the first or second signal is output first and outputting the detected signal; and

a data determining section for receiving the detected result from the delay time measuring section and determining whether the data signal is a combination of a first level and a first level, the first level and a second level, the second level and the first level, or the second level and the second level, of a binary logic level.

11. An ultra-wideband wireless communication method for use with an ultra-wideband transmitter and receiver, the transmitter including a delay time controller, first through third matched filters, an adder, and a first antenna section, and the receiver including a second antenna section, fourth and fifth matched filters, a delay time measuring section, and a data determining section , the method comprising the steps of:

generating and inputting a periodic pulse to the first matched filter, outputting the periodic pulse to the second matched filter when data to be transmitted are at a first level of a binary logic level, and outputting the periodic pulse to the third matched filter when the data to be transmitted are at a second level of the binary logic level by the delay time controller;

receiving the periodic pulse from the delay time controller and outputting a reference signal for data determination by the first matched filter;

receiving the periodic pulse from the delay time controller and outputting a first data signal earlier than the reference signal by a predetermined time by the second matched filter;

receiving the periodic pulse from the delay time controller and outputting a second data signal later than the reference signal by the predetermined time by the third matched filter;

adding the outputs of the first, second, and third matched filters and outputting an added signal by the adder;

receiving the added signal from the adder and radiating the received added signal into the air by the first antenna section;

receiving and outputting the added signal to the fourth and the fifth matched filters by the second antenna section;

receiving the added wave signal from the second antenna section and outputting a first output signal when the fourth matched filter detects a reference signal for data determination by the fourth matched filter;

receiving the electronic wave signal from the second antenna section and outputting a second output signal when the fifth matched filter detects a data signal by the fifth matched filter;

detecting which of the first and second output signal is output first and outputting the detected result by the delay time measuring section; and

receiving the detected result from the delay time measuring section and determining whether the data signal is a first level or a second level of a binary logic level by the data determining section.

12. The ultra-wideband wireless communication method according to claim 11, wherein each of the reference signal, the first data signal, and the second data signal is a pattern signal including a plurality of periodic pulses.

13. The ultra-wideband wireless communication method according to claim 11, further comprising amplifying the added signal from the adder and outputting the amplified signal to the first antenna by an amplifier of the ultra-wideband transmitter.

14. The ultra-wideband wireless communication method according to claim 11, further comprising amplifying the added signal from the second antenna and outputting the amplified signal to the fourth and fifth matched filters by an amplifier of the ultra-wideband wireless receiver.

15. The ultra-wideband wireless communication method according to claim 11, wherein the step of detecting which of the first and second output signal is output first comprises:

receiving the first output signal from the first matched filter and calculating a square value or an absolute value of the first output signal in a first circuit; and

receiving the second output signal from the second matched filter and calculating a square value or an absolute value of the second output signal, in a second circuit.

16. The ultra-wideband wireless communication method according to claim 15, wherein the step of detecting which of the first and second output signal is output first further comprises:

receiving and latching the first output signal from the first matched filter in a first latch section;

receiving and latching the second output signal from the second matched filter in a second latch section;

receiving the first output signal from the first matched filter and reading the second output signal in a first storage unit;

receiving the second output signal from the second matched filter and reading the first output signal in a second storage unit; and

receiving the signal latched by the first or second latch section and outputting a reset signal in a reset section.